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Abstract

This article examines the roles of socio-symbolic practices and cosmological beliefs in the production and exchange of stone artefacts in an ethnohistorically documented context in Australia. Isabel McBryde's petrological and ethnohistorical analysis of greenstone axe distribution patterns in central Victoria provides a key example of social factors overriding technological concerns in the production and exchange of lithic artefacts. Her research shows that greenstone axes from Mt William quarry were distributed further than axes from equivalent sources. This suggests that Mt William stone axes had symbolic values that cannot be appreciated from straightforward economic perspectives - the aim of this article is to investigate why. A detailed consideration of the ethnohistorical evidence highlights the embeddedness of axe technology in cultural perceptions of landscape and the belief systems of Aboriginal people.

Keywords

falling, sky, symbolic, cosmological, associations, William, greenstone, axe, quarry, Central, Victoria, Australia

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‘The Falling Sky’: Symbolic and Cosmological Associations of the Mt William Greenstone Axe Quarry, Central Victoria, Australia

Adam Brumm

This article examines the roles of socio-symbolic practices and cosmological beliefs in the production and exchange of stone artefacts in an ethnohistorically documented context in Australia. Isabel McBryde’s petrological and ethnohistorical analysis of greenstone axe distribution patterns in central Victoria provides a key example of social factors overriding technological concerns in the production and exchange of lithic artefacts. Her research shows that greenstone axes from Mt William quarry were distributed further than axes from equivalent sources. This suggests that Mt William stone axes had symbolic values that cannot be appreciated from straightforward economic perspectives — the aim of this article is to investigate why. A detailed consideration of the ethnohistorical evidence highlights the embeddedness of axe technology in cultural perceptions of landscape and the belief systems of Aboriginal people.

Stone tools are products of past human societies, but what can they tell us about the nature of these societies and their symbolic conventions — their ideals, beliefs and values? In the Australasian region we are fortunate in having direct insight into cultural perceptions of quarry locations among recent stone-using peoples. In the Papua New Guinean Highlands (including adjacent Irian Jaya), for instance, anthropologists have documented the dynamic social organization and ritual and mythological associations of stone axe production and exchange systems in the immediate post-contact period (e.g. Burton 1984; Hampton 1999; Pétrequin & Pétrequin 1993; Stout 2002). In Australia, similarly, there is abundant ethnographic evidence to support the notion that stone sources are often implicated in the cosmological worldviews and religious frameworks of Aboriginal people (e.g. Brumm 2004; Davidson *et al.* 2005; Gould 1977; 1980; Graham & Thorley 1996; Jones 1990; Jones & White 1988; Mulvaney 1998; 2001; Palmer 1977; Paton 1994; Taçon 1991; 2008; see also Hiscock 2005 for archaeological insights into the social organization of axe production sequences at certain major quarries). In parts of northern Australia, in particular, tool-stone is considered to

be a sentient, and often dangerous, ritual substance formed from the bodily matter (e.g. blood, fat and flesh) of Ancestral Beings deposited onto the landscape and transformed into rock (Brumm 2004). Elsewhere in Australia, Western Desert people are known to go to great lengths to obtain stone from outcrops associated with their own particular totemic ancestors (Gould 1977; 1980). We must, of course, be wary about projecting ethnographic images such as these onto the archaeological record, both in Australasia and further afield (Hiscock 2008). However, there is much here that resonates with current ‘social’ interpretations of prehistoric stone use and tool distribution patterns elsewhere in the world, especially in Neolithic Britain and continental Europe (e.g. Bradley 2000; Bradley & Edmonds 1993; Cooney 1998; Edmonds 1995; Larsson 2000; Patton 1993; Rudebeck 1998; Skeates 1995; 2002; Thomas & Tilley 1993; Tilley 2004).

This article examines a specific case study from southeastern Australia pertaining to the social dimensions of stone axe production and exchange in the recent historical period and the symbolic importance of certain quarried outcrops in these activities. Among her many influential studies, Isabel



Figure 1. Mt William greenstone axe quarry, c. 1906. McBryde's (1978) survey recorded extensive evidence for large-scale bedrock quarrying and below-ground extraction of greenstone along a 1 km long ridge at the production site (see also Casey 1971; Mitchell 1961). McBryde (1978) recorded abundant flaking floors and piles of débitage up to 50 m long, circular mounds of knapping debris up to 2 m in diameter and 1 m high, and more than 250 shallow mining pits surrounded by scree slopes of chips and broken axe blanks. (Reproduced with permission from the State Library of Victoria; H90.161/277, Image No: b11017.)

McBryde's pioneering petrological and ethnohistorical analysis of greenstone axe distribution in central Victoria has proved central to our understanding of stone tool dispersal patterns in Australia and the extent to which they were underwritten by social concerns (McBryde 1978; 1984a,b; 1986; 2000a; McBryde & Harrison 1981; McBryde & Watchman 1976; see also McBryde 1987; 1997; 2000b). Her archaeological research shows that particular quarried stone outcrops were preferred over those of identical or equivalent quality as the focus for intensive axe production and long-distance exchange. Similarly, her masterful use of ethnohistorical sources provides a framework for interpreting these patterns that stresses the social values of exchange practices and, in particular, the profound importance of certain quarried stone sources in the landscape. A careful consideration of McBryde's research provides a platform for wider investigations of the social dimensions of stone axe production and exchange in southeastern Australia and, potentially, further afield.

McBryde's greenstone axe distribution study

McBryde's greenstone axe distribution study began with the aim of reconstructing past Aboriginal exchange systems in Australia. The Mt William greenstone axe quarry (Figs. 1–2), situated 70 km north of Melbourne, provided an ideal starting point (McBryde 1978). Mt William quarry was still in use in the 1830s and 1840s at the time of initial British settlement of Melbourne (Bonwick 1883; Christie 1979), and was well known to early European observers as the principal source of axe-stone for Aboriginal people in Victoria (e.g. Anon. 1855; Blandowski 1855; Krefft 1865; Dawson 1881; Smyth 1878; Batey 1886; Davis 1898; Howitt 1904; Barnard 1907; Hall 1908). Contemporary accounts record large-scale meetings between Aboriginal groups at which Mt William greenstone was exchanged for spears (Smyth 1878, 181), sandstone and possum-skin cloaks (McBryde 1978, 364). Aboriginal people were also known to travel great distances to the quarry to obtain greenstone (Anon.

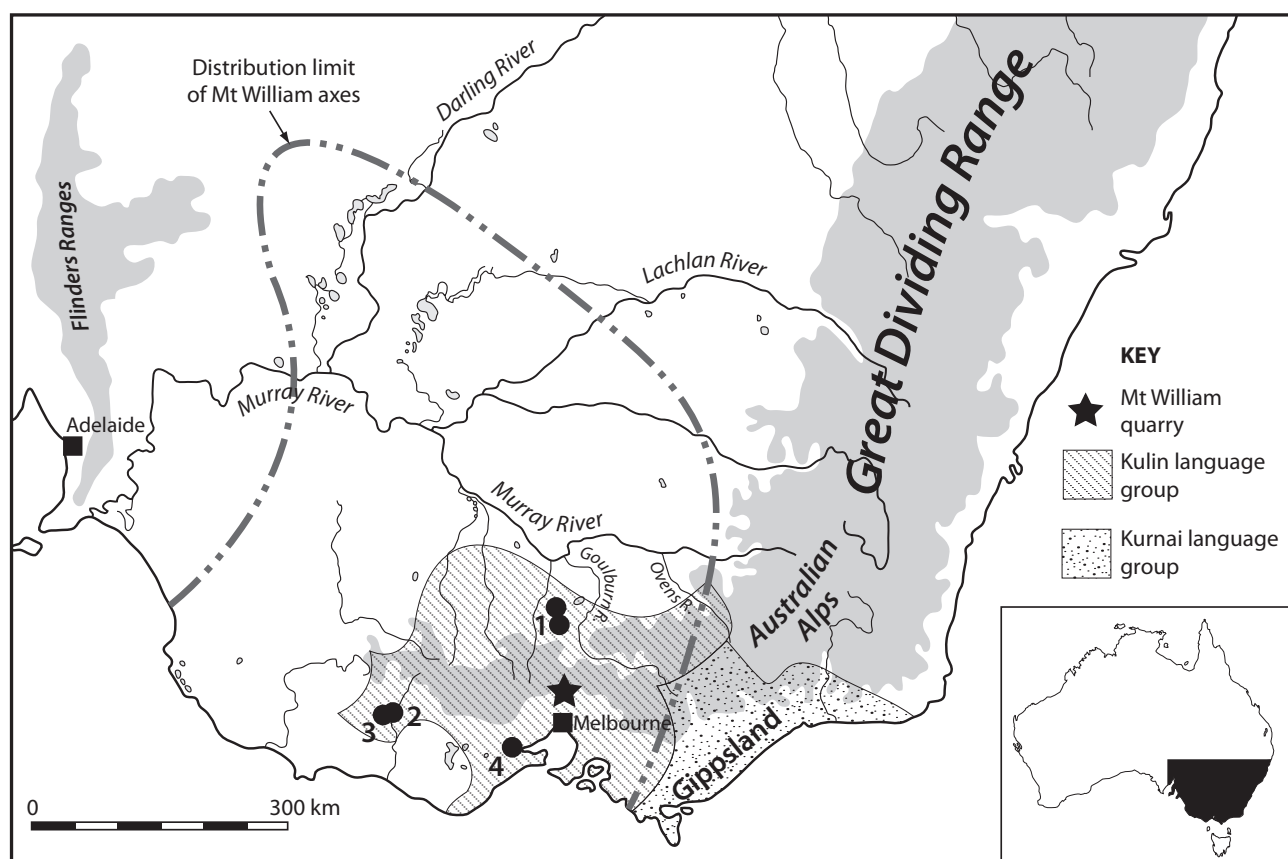


Figure 2. Distribution range of greenstone axes from Mt William quarry. Other major axe quarries in the Cambrian belt of central Victoria are marked with black circles: 1) Mt Camel North and Mt Camel South; 2) Berrambol; 3) Baronga; and 4) Geelong. For distribution ranges of greenstone axes from these quarries, see Figure 3. All of the greenstone quarries are located within the Kulin language/cultural area (shaded with dotted lines); and greenstone axes are statistically absent from the Kurnai language/cultural area (shaded with scattered dots). (Map modified from McBryde 1984a, 268 fig. 1).

1855; Blandowski 1855, 57), which was recognized hundreds of kilometres from the source (Anon. 1855; Batey 1886, 158; Batey n.d. cited in McBryde & Harrison 1981, 183).

McBryde's analysis focused on the petrological and geochemical identification of Mt William axes and the source characterization of quarried greenstone (amphibole hornfels) outcrops in the Cambrian belt of central Victoria (McBryde 1978; McBryde & Watchman 1976). Among a large sample (c. 1400) of greenstone axes, she found that Mt William specimens were distributed much further than axes from other greenstone quarries, up to 1000 km from the source (McBryde 1978; 2000b; McBryde & Harrison 1981, 183; Fig. 3). Mt William axes (Fig. 4) also show no significant change in maximum linear dimensions across their distribution range: axes recorded hundreds of kilometres from Mt William are similar in size to those found much closer to the quarry (McBryde & Harrison

1981). Furthermore, Mt William axes were distributed in distinct, non-random directions. Axes were concentrated in lowland areas between the uplands of the Great Dividing Range and the ranges to the west of the Murray River and its southern Victorian tributaries, but were largely absent from northeastern Victoria and the Gippsland region (McBryde 1978; Fig. 2).

McBryde's research showed that Mt William greenstone was clearly favoured for axe production in many parts of Victoria. Yet the areas into which these axes moved were often abundantly supplied with technologically equivalent basalts and dolerites (McBryde 1978). Many of the regions also contain quarried outcrops of similarly high-quality greenstone. Aggregate impact value tests showed no significant differences between Mt William greenstone and the material available at other Cambrian belt greenstone quarries (McBryde 1978, 357). Given the availability of these local raw materials, McBryde argued 'There

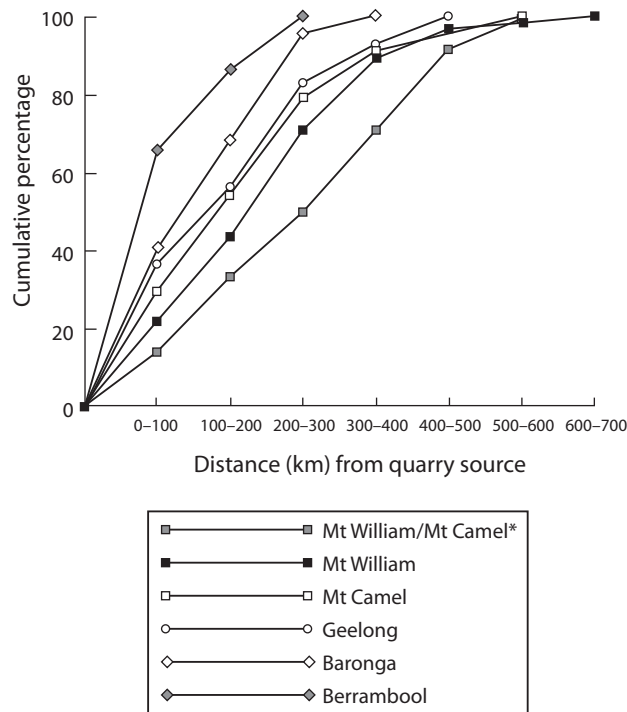


Figure 3. Cumulative frequency distribution showing the relative distances travelled by greenstone axes from central Victorian quarries. Quarry sources and total numbers of axes sampled are: Mt William ($n = 200$); Mt Camel ($n = 68$); Mt William/Mt Camel* ($n = 165$); Berrambool ($n = 152$); Baronga ($n = 22$); Geelong ($n = 30$). All data sourced from McBryde (1978, 356 table 1). In a recent paper McBryde (2000b) notes that Mt William axes are found more than 1000 km from the quarry. *A proportion of greenstone axes from Mt William and Mt Camel overlap petrologically and may belong to either group (see McBryde 1978 for discussion).

is no technological necessity in the importation of greenstone' (1978, 357). The lack of change in the sizes of Mt William axes at great distances from the quarry also suggested that they were valued goods retained for symbolic purposes and not generally put to everyday use (McBryde & Harrison 1981).

Anomalies in the spatial distribution of Mt William axes provided the most intriguing insights into the social contexts of axe production and exchange (McBryde 1978; 1984a). These non-uniform dispersal patterns were difficult to explain from a straightforward demographic or environmental perspective. McBryde (1978, 362) noted that the absence of Mt William axes in the highlands of northeastern Victoria might be interpreted to mean that population sizes were low in this poorly resourced region. However,

greenstone axes were also largely absent from the richly resourced Gippsland, which was densely populated in the historical period. She also considered the possibility that ecological and geographical barriers, such as forested mountain ranges, may have prevented contact between groups. Most highland areas of Victoria, however, are incised by river valleys that provide pathways for population movement from adjoining lowlands (e.g. Flood 1980, 116). Directional trends in the dispersal of Mt William axes, McBryde (1978) concluded, do not reflect the distribution and density of Aboriginal populations or geographic/environmental barriers.

McBryde therefore returned to ethnohistorical sources in an attempt to account for these phenomena (McBryde 1984a; 1986). At the time of European settlement Mt William quarry was situated on the traditional estate or 'country' of a major language group known as the Kulin (Howitt 1904; McBryde 1978, 363; Fig. 2). Situated to the southeast of the Kulin in the Gippsland region were a linguistically distinct and socially isolated group known as the Kurnai (Fison & Howitt 1880; Howitt 1904; Fig. 2). In historical times, the Kulin and Kurnai were bitter enemies with frequent violent skirmishes and territorial incursions occurring between them. In light of this McBryde (1986) inferred that traditional animosity between the Kulin and Kurnai may have precluded formalized exchange relations between them. McBryde's (1986) linguistic reconstructions for southeastern Australia also showed that greenstone axes from the Central Belt quarries moved within language areas that shared a close genetic relationship and similar lexical items related to stone and stone axes (McBryde 1986), suggesting that greenstone axes were most often exchanged among groups who were interrelated socially, for example through inter-marriage. Thus, language barriers may have prevented the movement of axes into certain areas. McBryde contended, therefore, that the absence of Mt William axes in the Gippsland and adjoining upland regions of northeastern Victoria may be a consequence of social factors.

McBryde's axe-distribution study highlights the extent to which the nature of social relations underpinned the production and exchange of stone axes in southeastern Australia. Her petrological and ethnohistorical analyses imply that the reasons for the popularity of a given source of tool-making stone may be complex, involving factors that are not easily reduced to straightforward economic or utilitarian considerations: 'In mapping changes in the distribution arrays of [axe] stone from the various major quarries we may therefore be mapping changes in the social relation-

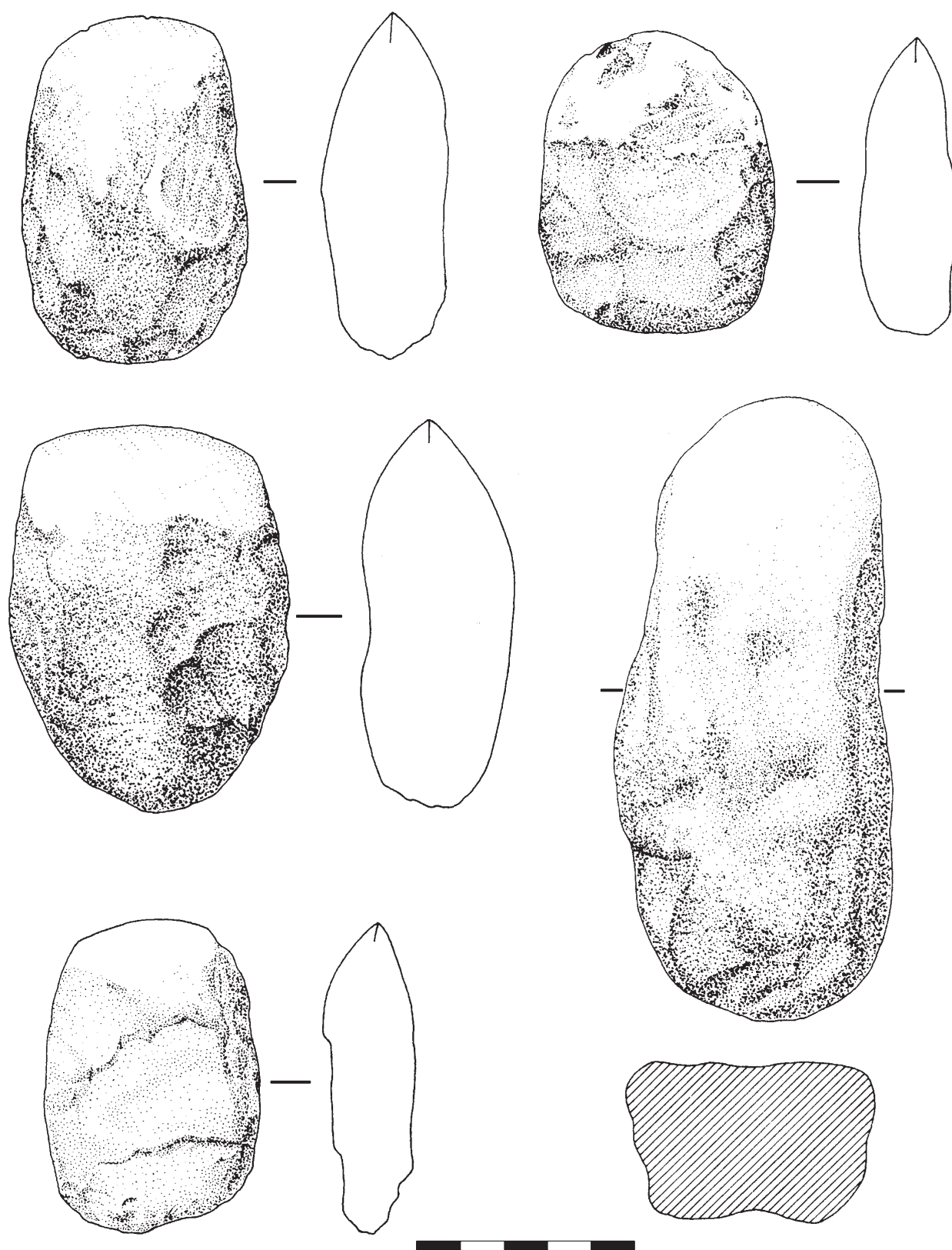


Figure 4. Greenstone axes from Mt William quarry (after McBryde & Harrison 1981). Scale = 50 mm.

ships these distributions reflect' (McBryde 1984b, 151). These are salutary lessons for archaeologists seeking to reconstruct prehistoric lithic production and exchange systems in Australia and elsewhere from strictly economic perspectives (Holdaway & Stern 2004, 90–91). Despite the far-reaching significance of McBryde's research, however, a simple but fundamental problem remains: *Why* were the axes from Mt William quarry in particular so symbolically important across such a vast region of southeastern Australia?

The following discussion is offered as a speculative but hopefully still useful contribution to this problem using the limited but invaluable ethnohistorical resources available for the region. Careful consideration of this evidence suggests that a major element of the significance of Mt William may relate to the extent to which the greenstone quarry — and stone axe technology — embodied ideas about the symbolic meaning and power of the Victorian landscape and other key religious knowledge.

Social organization of Mt William quarry

It is important to begin any consideration of Mt William with a discussion of the social organization of the quarry at the time of European settlement. This information primarily comes from one source: the police magistrate and amateur ethnographer William Howitt's (1904) interviews with the senior Kulin male elder, William Barak (c. 1824–1903). Barak was the nephew of the last traditional custodian of Mt William quarry at the time that it was active. As an 11-year-old he witnessed the signing of the 1835 land 'treaty' between John Batman and local clan-leaders that led to the establishment of Melbourne (Billot 1979). Howitt's (1904) interviews with Barak took place in the 1880s by which time he and his people had been displaced from their traditional homelands and were living on the Coranderrk mission (Barwick 1984, 113). However, his recollections provide crucial insight into the social organization of Mt William quarry (Barwick 1984; Clark 1990).

The historically known Kulin occupied much of southern Victoria (Presland 1985; Fig. 2). The Kulin 'nation' or 'confederacy' was a regional cultural bloc comprising local land-owning groups linked together by similarities in speech, burial and initiation practices strengthened by kinship ties resulting from generations of inter-marriage (Barwick 1984, 104–6; Clark 1990). The southern Victorian clans in the wider Melbourne region belonged to the East Kulin Language confederacy, including the Bunurong, Woiworung, Taungurong (Thagunworung) and Nguraiillam-

wurrung, plus two neighbouring clans with closer linguistic links to the western Victorian Kulin, the Wathaurung and Jajowrong (Barwick 1984; Clark 1990). Each of these groups was further divided into named patrilineal descent groups, or clans, whose members shared a common historical, religious and genealogical identity (Barwick 1984). A major bond maintaining the Kulin confederacy was the nature of its patrilineal moiety organization. Every Kulin individual belonged either to the eaglehawk (*bunjil*) or crow (*waa*) moiety, and could only marry into the opposite moiety. Together with clan membership, moiety affiliation shaped marriage arrangements and consequent rights of inheritance of political tenure and land ownership (Barwick 1984).

Each Kulin clan and its component patrilineages were governed by one or more senior male elders or *ngurungaeta* (Barwick 1984, 107; Howitt 1904, 307–12; Presland 1985). These clan-heads were greatly respected and influential figures:

A clan-head had effective authority within his own group and was considered its rightful representative in external affairs. All clan-heads were men of distinguished achievement; certain of them were so eminent that their wishes were obeyed by all clans ... and their religious authority was acknowledged far beyond the region (Barwick 1984, 107–8).

Much of the power of the southern Victorian *ngurungaeta* was linked to their polygynous marriages. As senior figures they were able to acquire larger numbers of wives, producing many children for marrying-off in politically advantageous unions (Barwick 1984, 108). Some *ngurungaeta*'s influence was such that they were able to appoint other senior clan-heads within their own clan or patriline, resulting in networks of closely interrelated *ngurungaeta* exerting considerable influence in the region (Howitt 1904; Barwick 1984). Among the socio-political and ritual duties of the *ngurungaeta* was their custodianship of sacred sites and other important localities, many of which were significant to far-distant Kulin groups. Mt William greenstone axe quarry, according to contemporary descriptions, was one such locality.

At the time of European settlement Mt William was situated on the border between the estates of two local patrilineages of the Woiworung: the Gunung Willam Balug and the Wurundjeri Willam (Barwick 1984; Clark 1990; Howitt 1904). The traditional country of the Gunung Willam Balug was the area around Mt Macedon to the northwest of Melbourne. The Wurundjeri Willam claimed most of the land within the Yarra River catchment area to the north of Port Phillip Bay. *Ngurungaetas* from both groups asserted strict

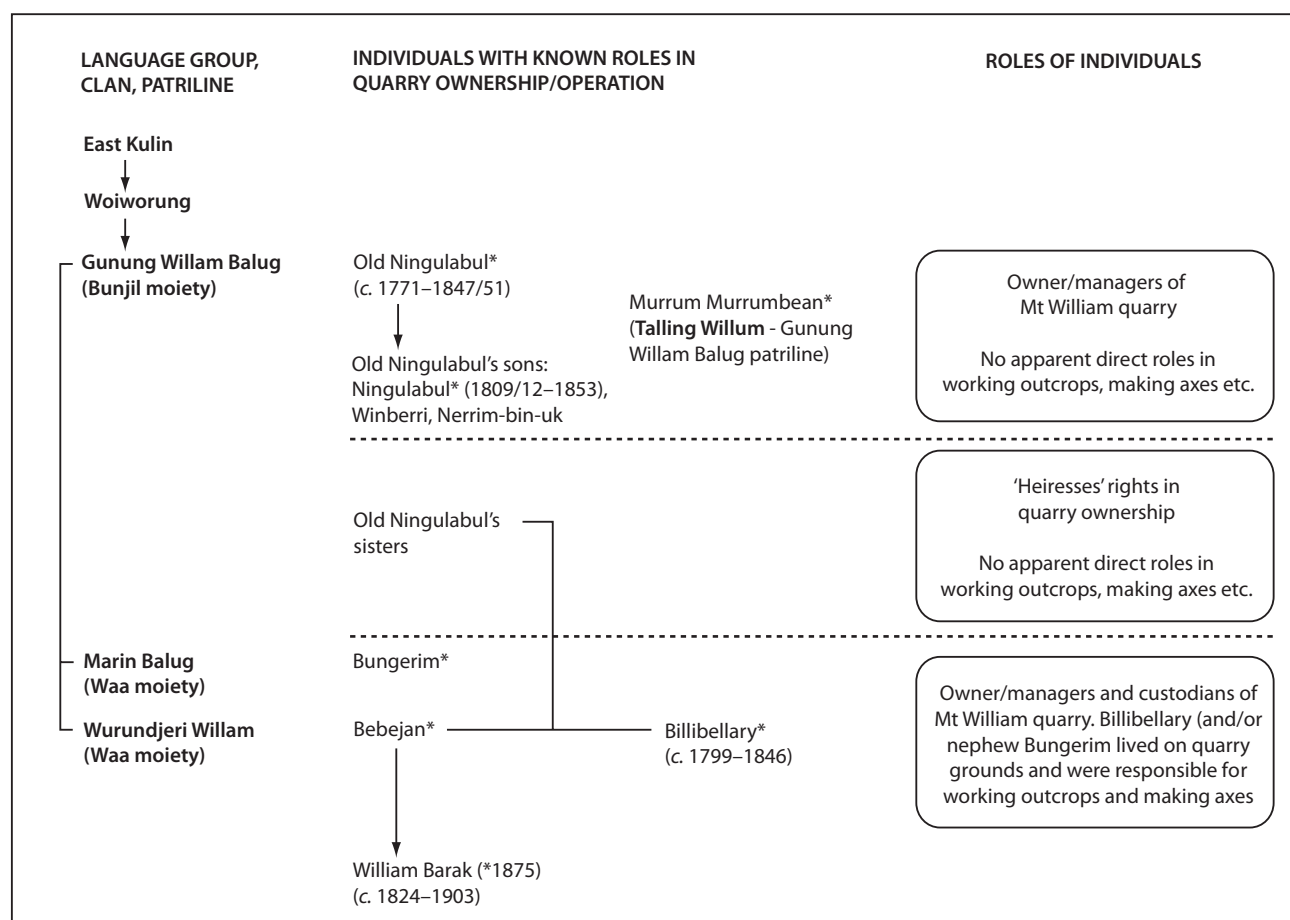


Figure 5. Social organization of Mt William quarry, 1840s. An asterisk (*) next to a name signifies that the individual was a senior male elder: *ngurungaeta*. (Data derived from Howitt 1904; Thomas 1854; Barwick 1984; Clark 1990).

control over the ownership and maintenance of Mt William quarry (Howitt 1904; see Fig. 5). The primary owner/managers of Mt William quarry in the 1830s were Old Ningulabul — whose name meant ‘stone tomahawk’ (McBryde 1984a, 272), but also ‘shining ... like the sun shining on a smooth stone’ (Howitt 1904, 310) — a powerful Gunung Willam Balug *ngurungaeta*, his sons, also influential men, and another *ngurungaeta*, Murrum Murrumbean, from a distinct patriline within the same group (Howitt 1904, 311; Clark 1990). Ningulabul's sisters also played important roles; as they were married into the Wurundjeri Willam, their sons, Billibellary and Bebejan, were intimately involved in the quarry's operations.

Billibellary, *ngurungaeta* of the Wurundjeri Willam (Thomas 1854), maintained the quarry for both groups as custodian (Howitt 1904). Billibellary alone was permitted to live at the quarry and work its outcrops, although his nephew Bungerim took

over from him when he was away (Howitt 1904). Neighbouring Kulin wishing to obtain stone were known to travel great distances to the quarry. Here, according to a strict code of behaviour, they met with Billibellary and exchanged items for greenstone (Howitt 1904, 312).

Despite the importance of Billibellary's role, Old Ningulabul's proprietorial rights in the quarry were held by Barak to be the most significant of all (McBryde 1984b, 271–2). This enigmatic figure is described as having exercised ‘paramount religious authority’ in the region (Barwick 1984, 121). According to Barak it was Old Ningulabul who ‘made’ Billibellary a *ngurungaeta* (Howitt 1904, 310). In addition to Mt William, Old Ningulabul was also responsible for the custodianship of sacred sites near Gisborne, 55 km north of Melbourne at the southern end of the Macedon Ranges, important to many Woiworung, Jajow-rong and Wathaurung groups (Barwick 1984, 121).

Ngurungaeta, therefore, both as individuals and closely interrelated networks played crucial roles in the Kulin social and political hierarchy and the organization and control of Mt William quarry. A closer examination of the activities of these individuals sheds some light on the symbolic beliefs surrounding the production and exchange of stone axes in Victoria.

Kulin 'song-makers'

Ngurungaeta were not democratically elected (Howitt 1904, 308). This position most often went to the son or nearest male relative of the previous *ngurungaeta*. First, however, the candidate had to demonstrate their worthiness for the role, gathering around them a core of supporters through a combination of great personal charisma and oratorical flourish (Howitt 1904, 310). In the case of the latter, song-making abilities appear to have been particularly important. Old Ningulabul, it is said, for example, came from a long line of distinguished orators, 'the makers of songs which made men sad or joyful when they heard them' (Howitt 1887, 330). His sons were also renowned 'song-makers' (Barwick 1984, 121).

Songs and song-making played complex roles in Kulin society (Howitt 1887; 1904). The Kulin definition of song is not strictly confined to the English definition and encompassed a wide range of musical and vocal-based compositions, including spoken or sung myths, stories and other oral narratives. They most often involved a ritualized dance element and could be performed individually or incorporated within major religious ceremonies, termed 'corroborees' by early European observers (Howitt 1887). Some songs were secular and for public or personal entertainment, but the most important communicated religious knowledge. Indeed, the great esteem of Woiworung song-makers in Kulin society did not relate to their creative ability to compose songs but rather their capacity to receive and transmit them from the Ancestral world (Howitt 1887, 329). As Howitt recorded, songs were said to come to song-makers from the spirits of deceased relatives, usually in dreams, or from revered Ancestral Beings like Bunjil (see below), whose power "rushes down" into the heart of the singer' (1887, 330). Woiworung song-makers, therefore, were seen as having no creative role in the composition of songs: 'It was said that the person who sang it "got it from his grandfather, who got it from his parents, who got it from the old people, who got it from Bunjil"' (Howitt 1904, 418).

The influence of such song-makers was not confined to their immediate family group or clan:

'Their names are known to the neighbouring peoples, and their songs are carried from tribe to tribe, until the very meaning of the words is lost as well as the original source of the song' (Howitt 1887, 329). Howitt (1887, 329) recorded one song travelling up to 800 km from its source of origin (see also Dawson 1881, 80). A major reason for this seems to have been the remarkably widespread nature of cosmological and mythological beliefs in Victoria (e.g. Ellender 2002; Howitt 1904; Massola 1968; Presland 1985; Thomas n.d.; Ridley 1873).

Belief in the existence of Bunjil, also known as Baiame, was common across a large part of southeastern Australia (Howitt 1904, 488). Bunjil was especially important in central Victorian beliefs. According to the Assistant Protector of Aborigines William Thomas (n.d., 86, 88), Kulin myths recount Bunjil using a large stone knife or 'a flint' (Robinson 1841, in Clark 1998a, 324) to carve up the earth, forming the rivers and creeks and mountains and valleys. Bunjil was most often associated with the sky and certain mountains where he was thought to reside. In some Woiworung accounts he is said to have dwelled in the night sky as the star Fomalhaut, or Altair (Howitt 1884, 193; 1886, 414), while others claimed that he lived in the mountains in the headwaters of the Yarra River (Fison & Howitt 1880, 210; Thomas n.d., 91). Another account suggests that the place at Western Port Bay where Bunjil terminated his journeys was 'hallowed ground' for the Woiworung (Barwick 1984, 115).

Thomas (n.d., 89) also related details about the widespread nature of belief in the greatly feared 'Myndie'. Myndie, a spirit in the form of an enormous snake several kilometres long, was under the control of Bunjil, who sent it to punish wrongdoers with lethal diseases and plagues. The snake-being was said to have inhabited a granitic mountain to the northwest of Melbourne (Mt Buckrabanyule: see Massola 1969, 42), a dangerous place thought to cause sickness and death to anyone approaching. Other than Bunjil, only senior members of a Kulin clan known as the Munnie Brumbrum were able to control the being. These individuals lived in the vicinity of Myndie's mountain and were described as 'possessing great power' (Thomas, in Smyth 1878, 445). Thomas recalled the widespread panic instilled by the arrest in 1840 of a particularly revered member of the Munnie Brumbrum clan (see also Robinson 1840, in Clark 1998b, 204). The message spread to Aboriginal groups more than 300 km away that the Munnie Brumbrum elder had been incarcerated. The entire Aboriginal population of Melbourne fled the settlement for several months believing that the imprisoned man would summon Myndie (Thomas, in Smyth 1878, 445–6).

Kulin cosmology also shared important elements of more widespread southeastern Australian beliefs (Massola 1968, 82). These often concerned sacred places that lay outside the limits of Kulin territory. For example, despite the traditional enmity between them the creationary journeys of the Ancestral Being Lohan are said to have linked important sites within the estates of both the Kulin and the Kurnai (Ellender 2002; see also Howitt 1886). According to Howitt (1886, 416–17), Lohan journeyed from the banks of the Yarra River south towards Western Port following the migrations of swans. He eventually left Kulin country and travelled eastwards along the coast into Gippsland, residing permanently in the mountainous recesses of Kurnai country. The area of land adjacent to his resting place extending along the Bass Strait coast east of Port Phillip Bay possibly as far as Lakes Entrance (Ellender 2002) was considered by both Kulin and Kurnai peoples to be spiritually dangerous, ‘bad country’ (Barwick 1984, 115).

For the historical Kulin, control of the religious knowledge, or song, for such widely known entities and, importantly, the places they created and/or infused with power may have provided individuals with political and economic opportunities. As Howitt (1904, 413) discussed, songs were integral to Aboriginal societies in Victoria and southeastern Australia and song-makers were held in great esteem, their songs transmitted over hundreds of kilometres through a system of shared cosmological and mythological beliefs. These were individuals whose knowledge had the potential to reach and influence a far wider audience than their immediate family group or clan. Woiworung *ngurungaeta* even appointed special multilingual messengers who carried their ‘word’ to neighbouring groups (Howitt 1889, 1904); Billibellary’s messengers were Old Ningulabul’s sons, famed song-makers with rights in the ownership of Mt William quarry (Barwick 1984, 121).

It seems of more than passing interest, therefore, that strict control of Mt William quarry was exercised by a network of *ngurungaeta* song-makers with key roles in the communication of important religious knowledge. What was the role of stone axe technology in central Victorian myths and oral traditions, or song?

Stone axes in mythology

Unfortunately, the evidence for Aboriginal myth and oral traditions in the Victorian region, owing to the violent dispossession of these groups early in the colonial history of Australia, is extremely fragmentary. It provides glimpses only of what would have once

been a much richer set of beliefs and practices. Some extant myths may be relatively ‘open’ or public versions of narratives that contained levels of meaning known only to those initiated into the highest levels of religious knowledge. That information is now lost. The surviving elements, however, provide insights into the role of stone axe technology in central Victorian symbolic belief and practice (see, for example, Dawson 1881, 105–6; Howitt 1904, 652; Mathews 1905, 155; Smyth 1878, 432). The most compelling myths concern the role of stone axes in the formation of certain salient features of the southeastern Australian landscape by powerful Ancestral Beings.

An important waterhole in a granitic rock formation near the town of Byrock in central New South Wales in Ngemba mythology is believed to have been created by Baiame — like Bunjil, a principal Ancestral Being of southeastern Australia — who ‘dug the water hole with his stone hatchet, and every time it became blunt during the operation, he whetted it on the surface near him’ (Mathews 1905, 138). In a Western Kulin narrative, an Ancestral Being smashed open the head of another using a stone axe, the subject of an unsatisfactory gift exchange between them (Massola 1962, 110; 1968, 29; see also Stanbridge 1861, 300 for an earlier version). The axe-wielding Ancestral Being subsequently transformed into Mt Buninyong, a prominent extinct volcanic cone (700 m above sea level) on the Western Plains near Ballarat. The other Ancestral Being transformed into Mt Elephant, a steep scoria cone with breached crater rising 200 m from the surrounding volcanic plain. In another myth a prominent cobble bar beneath wave-cut basaltic cliffs on the northwestern shores of Lake Burrumbeet near Ballarat is said to have been formed from the stone axes of people killed by a local spirit; these axes were used by vengeful relatives to destroy the spirit (Massola 1962, 111–12). In a myth attributed to Billibellary, the stone axes of two Woiworung creationary figures were used to dig up the earth and form the various channels and tributaries of the Yarra River, leading to the creation of Port Phillip Bay (Massola 1968, 58).

The evidence from Aboriginal myths, whilst incomplete, hints at the importance of stone axes in the creation of certain key features of the Kulin landscape by powerful Ancestral Beings. So is this the reason for the significance of Mt William: the embeddedness of the quarry in Aboriginal understandings of the creation and meaning of the central Victorian landscape and the control of these beliefs by the song-making quarry-owners? Further historical evidence suggests that the picture may be more complex.

'The falling sky'

Howitt (1884, 186) recorded the Kulin belief that the sky was a dome propped up by poles resting 'somewhere in the mountains in the north-east of Victoria'. If the poles should fall, it was said, the sky would collapse and the clouds would burst, releasing their water and drowning everyone. Concerning this belief, Barak recalled the following incident to Howitt:

Before the 'white men came to Melbourne' a message was passed from tribe to tribe, until it reached the Wurunjerri, that the props were becoming rotten, and that unless tomahawks were at once sent up to cut new ones, the sky would fall and burst, and all the people would be drowned ... A similar message reached the Wiimbaio, having been passed from tribe to tribe down the Murray River. It was to the effect that the props were becoming rotten, and that unless some tomahawks were sent at once the sky would fall and kill every one (Howitt 1904, 427).

The same message also reached the Wathaurung Kulin at Geelong, as recorded by William Buckley (1780–1856), an English convict who escaped from a short-lived British settlement at Port Phillip Bay in 1803 and lived among the Wathaurung on the Barwon River until 1835 (Anon. 1911; Billot 1979; Bonwick 1883; Morgan 1852). Buckley was interviewed by John Morgan and recalled an episode similar to Barak's:

[The Wathaurung] have a notion, that the world is supported by props, which are in the charge of a man who lives at the farthest end of the earth. They were dreadfully alarmed on one occasion when I was with them, by news passed from tribe to tribe, that unless they could send him a supply of tomahawks for cutting some more props with, and some more rope to tie them with, the earth would go by the run, and all hands would be smothered. Fearful of this, they began to think, and enquire, and calculate, where the highest mountains were, and how to get at them, and on them, so as to have some chance of escape from the threatened danger. Notwithstanding this forethought, they set to work to provide the needful, and succeeded in this way. Passing on the word to the tribes along the coast, some settlers at a very great distance were robbed of axes, and saws, and rope, and tiers of dray wheels; all of which were forwarded on from tribe to tribe, to the old gentleman on the other side; and, as was supposed, in time to prevent the capsize, for it never happened (Morgan 1852, 57–8).

The accuracy of Morgan's (1852) somewhat romanticized account of Buckley's 'adventures' has been called into question (e.g. Bonwick 1883, 222). However, the government missionary George Langhorne

— to whom Buckley was assigned as Aboriginal interpreter in October 1836 — also made notes of his conversations with the convict, and these seem to confirm the 'falling sky' story. In Langhorne's (1837) account, which was not discovered for several decades (Anon. 1911), Buckley recalled the Wathaurung notion of a supernatural being which maintained the prop or pillar that kept the sky from falling:

Just before the Europeans came to Port Phillip this personage was the subject of general conversation it was reported among them that he had sent a message to the Tribes to send a certain number of Tomahawks to enable him to prepare a new prop for the Sky as the other had become rotten and their destruction was inevitable should the sky fall on them to prevent this and to supply as great a number of Iron Tomahawks as possible — some of the Blacks repaired to Western Port and stole the Iron work from the wheels of the Sealers cart ... (Buckley, cited in Langhorne 1837, 9–10).

The accounts of Barak and Buckley attest to the widespread belief in central and southern Victoria that the sky was held up by props located in a specific mountainous area in the northeast of Victoria or an otherwise remote location. It was also widely believed that 'tomahawks' (i.e. axes) were used, in some cases by a supernatural being, to maintain these props, suggesting that an important conceptual link was made between everyday axes and the supernatural axes used to keep the sky from falling. At some point prior to 1835 a state of terror ensued following news that the props were rotting and that the world would end unless many axes were sent up into the northeastern mountains — the fear instilled by this message bears similarity to the Myndie incident recalled by Thomas (see above), when the entire Aboriginal population of Melbourne fled in terror. At least among the Wathaurung Kulin near Geelong, a supply of axes was accumulated hurriedly and sent along as 'payment' to the supernatural being.

Unfortunately, none of the accounts specify whether the 'tomahawks' demanded by the supernatural being were stone or metal, or both. Buckley's recollections imply that the Wathaurung sent axes made from scavenged scrap iron as 'payment', but it is unclear whether they did this under their own initiative or were requested to do so. Prior to the establishment of a permanent settlement at Melbourne after 1835 iron axes and other tools made from scavenged metal were known to Aboriginal people of Victoria through periodic contact with Bass Strait sealers and whalers (Bonwick 1883), shipwrecks and marine debris (Dawson 1881, 111; Morgan 1852, 108), the temporary British settlements at Port Phillip (1803)

and Western Port (1826–1828) (Bonwick 1883; Christie 1979), and possibly also through long-distance exchange networks (Smyth 1878). Buckley's accounts are interesting, therefore, in that they suggest that iron axes and other hard-to-obtain European objects (e.g. rope) were possibly included as offerings to the supernatural being by those groups situated in close proximity to Europeans or otherwise able to access metal objects, especially coastal groups. This would not be surprising given the high value of European metal axes and tools in early Aboriginal societies and the rapidity with which these objects were incorporated into traditional gift exchange networks, often being traded over great distances inland (Dickson 1981; Mitchell 1994; Sharp 1952; Thomson 1949). However, access to metal tools at that early time would have been irregular, and the great majority of axes possessed by Victorian Aboriginal groups would have been stone. Accordingly, it is probable that the 'tomahawks' believed to be used to maintain the props were stone axes.

Buckley noted that the Wathaurung procured their stone axes from a source located 'three hundred miles from the coast, inland', named 'karkeen' (Morgan 1852, 74). He remarked that Wathaurung men often made long and dangerous journeys to this source in order to procure stone by force. This quarry was probably Mt William. Mt William is situated only around 100 km in a straight line from Geelong; however, Buckley's estimate of 300 miles is unlikely to be accurate given that he never visited the source (Casey 1971) and the Wathaurung were unfamiliar with Western conventions for measuring distances. The word for stone axe among nineteenth-century Geelong groups was *karkain*, and among those in the vicinity of Mt William, *kargin*, providing a close match to Buckley's 'karkeen' (McBryde 1986, 81 fig. 6.3; see also Mathews 1904). It is also known from Barak's testimony that the Wathaurung obtained their greenstone axes from Mt William quarry, sometimes by theft (Howitt 1904). Buckley himself owned a hafted stone axe apparently made from Mt William greenstone for some 20 years during his time with the Wathaurung, presenting it as a gift to Gordon Thomas in June 1836 (Massola 1961, 205). It seems possible, therefore, that the Wathaurung also sent stone axes from Mt William to the supernatural being.

In any event it is the *supply* of axes demanded to keep the sky from falling that is significant, as Buckley himself seemed to imply: 'a tribute of this description is paid whenever possible: but who the knowing old juggling receiving thief is, I could never make out' (Morgan 1852, 58). Where did these axes go?

The end of the earth

Massola (1968, 105) identifies the northeastern mountains where the props were said to rest as the Australian Alps (Fig. 2). This vast (c. 150,000 km²) wilderness of undulating topography and 2000 m alpine summits contains the highest ranges and peaks in mainland Australia (Flood 1980). The Alps are also the source for the Murray River (Kosciuszko Ranges) and its tributary the Ovens River (Bogong Ranges). Prior to the disturbance of its flow regime by Europeans the Murray was semi-dry for most of the year; alpine runoff in the spring caused the river to flood giving new life to the surrounding floodplains. As the source of the Murray the snow-capped mountains of the Australian Alps may well have seemed like the very edge of the known universe to many central and southern Victorian lowland groups, not least those who depended on the river and its tributaries for survival. It seems noteworthy, therefore, that the first recorded instance of the 'falling sky' message comes from the headwaters of the Ovens River (Massola 1968, 105), and that the message was spread from group to group down the Murray River and its southern tributaries into Kulin country and far beyond (Howitt 1904, 427).

Relatively little is known about the groups inhabiting the Australian Alps at the time of European contact (Helms 1896; Howitt 1904; see Flood 1980 for review). Thomas was present, however, at a major ceremonial gathering at Merri Creek in 1840 that sheds interesting light on Kulin perceptions of these people. This meeting was attended by over 150 people from a distant group of the Lower Goulburn River and Buffalo River area in the northern foothills of the Australian Alps — 'far beyond the Kulin pale' (Barwick 1984, 108)—and their aged *ngurungaeta*, Kallakallap (Howitt 1904, 718; Smyth 1878, 136–7). Thomas was struck by the degree of respect and deference shown by the Kulin to the old man: 'None presumed to speak but in a low whisper in his presence' (Smyth 1878, 136). At sunrise the Kulin gathered around Kallakallap and heard him speak. Whenever Thomas approached, however, the old *ngurungaeta* would fall silent. Finally, after Kallakallap and his people had left the meeting, Thomas asked Billibellary, who had been present, what the revered clan-head had said:

He said that [Kallakallap] had informed them that there was a race living in the Alps who inhabited only the rocky parts, and had their homes in caves; that this people rarely left their haunts but when severely pressed by hunger, and mostly clung closely to their cave-dwellings; that to this people the Australians were indebted for corroborees; that corroborees

were conveyed by dreams to [Kallakallap's] people and other Australians; and that the men of the caves and rocks were altogether superior to the ordinary Aboriginal (Smyth 1878,137).

A similar story was recounted to Thomas by a 'Devils River' (Taungurong) man whose country lay in the vicinity of the Broken and Delatite Rivers to the north of the Australian Alps, at a ceremonial gathering at the Bulleen Ponds in 1843 known as the *Gaggip*:

He stated 'that there are in the Australian Alps a race of Blacks who live in Stone Houses made by themselves (not caves) and that some of these Blacks never go out to seek their food like other Blacks but eat herbs and what Blacks give them, that these Blacks are very good like our Sunday, that they teach Omeo, Devils River, Broken River and other Blacks Dancing and Singing, that often Blacks go to these Blacks and learn and when one tribe has *Gaggip* with another from that time they are friends—' (Thomas 1844, in Christie 1979, 19).

Belief in the power of these mysterious song-makers of the caves or 'stone houses' of the Australian Alps and the ceremony associated with them (*Gaggip*) were clearly important to the Kulin (Cooper 2003, 29). The *Gaggip* was a major intergroup religious ceremony involving several consecutive days of song and dance and the exchange of gifts (Thomas 1844, in Christie 1979, 19). It has its origins in Kulin mythology: in the creationary period, Richard Howitt (1845, 191) recorded, human beings were partially-shaped forms lying motionless in the earth; Bunjil gave them life by creating the sun which warmed them and caused them to come out from the earth and 'plenty sing'. The *Gaggip* ceremony was a recreation of these profound events and was deeply sacred to the Kulin. Its purpose was 'to unite and make ... friends' (Thomas 1844, in Christie 1979, 19).

An early sketch apparently produced by Billibellary depicts the events of the *Gaggip* (Sayers 1994, 103). Another of Billibellary's probable drawings shows the 'stone houses' of the residents of the Australian Alps and portrays the people themselves as ghost-like beings (Sayers 1994, 104). A later drawing by Barak (see Sayers 1994, 18) also seems to depict the 1840 Merri Creek ceremony (Cooper 2003), at which, he noted, 'people made presents to others from distant parts "to make friends"' (Howitt 1904, 718). Barak's drawing is of particular interest in that it depicts what is interpreted by Cooper (2003, 29) to be Kallakallap as an enormous cloaked figure addressing a large group of seated people. An array of 21 hafted stone axes surrounds the figure; these appear to have been placed on the ground as gifts, along with several boomerangs and digging sticks. Two cloaked figures

standing below the figure grip hafted stone axes in each hand and next to them is a pair of ghostly forms with upraised arms. The precise meaning of Barak's drawing is unclear. However, it is a convincing depiction of the Merri Creek meeting and the great significance of Kallakallap and his account of the Australian Alps people, along with the apparent symbolic role of stone axes in these proceedings.

So what are the implications of the 'falling sky' incident? What we may deduce from these curious accounts is that there was a widespread belief among the Kulin that a group of people — possibly apocryphal — lived in the Australian Alps where the props that held up the sky were located. These individuals were thought responsible for the songs and ceremonies of Aboriginal people, even those of the famed Woiworung song-makers, which they communicated through dreams to intermediaries such as Kallakallap's people. The alpine song-makers were associated with the *Gaggip* song and gift exchange ceremony, a major religious event that celebrated the period of creation. The precise connection between these people and the *Gaggip* is unclear; however, Thomas's information suggests that they taught the songs and dances of the *Gaggip* to the Kulin. The Australian Alps and its mysterious occupants were clearly important to the Kulin: both seem to relate to Kulin understandings of the origin and continued maintenance of human existence. The alpine people may have been seen as the rightful custodians of the mountains in which the props that held up the sky rested, or the only beings able to communicate with and/or placate the supernatural force in charge of maintaining them. Alternatively, clans living in the northern foothills of the Australian Alps, such as Kallakallap's people, may have served these roles. Barak's drawing hints at the possibility that Woiworung people made many gifts of stone axes to this revered *ngurungaeta* whom they believed to be in communication with the alpine song-makers.

The role of the Australian Alps in the symbolic meaning and power of stone axes and the movements of these artefacts across the landscape — including, potentially, axes from Mt William — is most intriguing.

The power of Mt William

We have moved some way from an examination of the cultural meanings of Mt William quarry. However, some important points can be drawn from these seemingly disparate observations:

- The production and exchange of stone axes in central and southern Victoria seems to have been

implicated in Aboriginal cosmological beliefs concerning the symbolic meaning of certain powerful places within the landscape and their creation by Ancestral forces.

- The traditional owner/managers of Mt William quarry were senior clan-heads and revered song-makers with strict control over religious knowledge (i.e. songs) and the capacity to spread this knowledge to distant clans, due to the shared nature of cosmological and religious belief in central and southern Victoria and the wider southeastern Australian region. This suggests that the great significance of Mt William quarry and its axes may relate to the importance of the associated religious knowledge for the site and the ongoing reproduction and control of this knowledge by the quarry owner/managers.
- However, the 'falling sky' story and the enigmatic role of the occupants of the Australian Alps, the reputed makers of all Aboriginal songs, hints at the possibility that the embeddedness of stone axe production and exchange in religious concerns may to some extent have transcended the knowledge and activities of individual quarry owner/managers.

The first two points suggest that variation in the distribution of axes from geologically equivalent greenstone sources in central Victoria may reflect the varying successes of individual quarry owner/managers in attempts to exert control over the religious knowledge for greenstone outcrops in their lands — or indeed, the lands of the neighbouring clans. McBryde's (1978) sourcing analysis provides no insight into the chronological dimensions of axe distribution in the region, as none of the axes sampled came from stratified contexts. However, placing the dispersal trends of axes into a chronological framework may provide insight into shifts in the symbolic meanings of different greenstone quarries through time. Perhaps at one time axes from another Cambrian greenstone source (see Figs. 2–3) were more widely dispersed than those from Mt William quarry — a possibility anticipated by McBryde (1978, 355). This could reflect the relative successes of the former quarry owner/managers in imbuing their own axe source/axes with symbolic power and prestige through local and regional networks. The point is that the cultural meanings of stone sources may change through time and this may be reflected in spatio-temporal trends in the distribution of axes from various quarries.

The 'falling sky' incident is of potential significance in this regard. It is tempting to view the Woiworong quarry owner/managers as the key agents in the greenstone axe production and exchange system

in Victoria. Available accounts portray these individuals as positioned at the very centre of the axe manufacturing and distribution network, exerting strict control over both the day-to-day operations and the religious knowledge for the site. They were members of a closely knit political hierarchy whose privileged status, it is argued, came from their ability to make Mt William axes seem more powerful than those from technologically equivalent sources. It is therefore tempting to view Billibellary and the other quarry owner/managers as rational actors, self-aggrandizing agents who knowingly manipulated shared beliefs for their own gain. Evidence presented here, however, suggests an alternative interpretation.

Figure 6 plots the dispersal of Mt William greenstone axes and the approximate geographical distribution of the 'falling sky' message. The degree of overlap between them suggests that the symbolic connection between axes and the continued maintenance of the universe was made by Aboriginal people over nearly the entire dispersal range of Mt William axes. From this correlation it is possible to speculate that large-scale production of stone axes and/or the flow of axes in specific, non-random directions in southeastern Australia may sometimes have been motivated by overt religious concerns (e.g. to celebrate the events of creation and/or to keep the sky from falling) rather than the perceived social or economic benefits derived, although these were no doubt resulting elements. In any event, the 'falling sky' incident implies that groups located *outside* the Kulin quarry centres may often have exerted an equally if not more important role in the distribution of greenstone axes, due to their custodianship of sites linked to the power and meaning of stone axes. This accords with McBryde's (1984a) observations that 70 per cent of Mt William axes occur outside Kulin country and that most recipients of Mt William axes probably obtained them from *redistribution* nodes far from the quarry itself.

The belief that the sky was supported by props located in the Australian Alps and maintained with supernatural axes was widespread in southeastern Australia. So too was the conviction that gifts of stone axes were needed in these alpine ranges to maintain the props in times of cosmological crisis. Billibellary was clearly an influential man in the stone axe production and exchange network, as were the other senior Woiworong clan-heads and song-makers who owned and managed Mt William quarry. However, it is difficult to reconcile the image of any of these individuals as the knowing figures at the centre of this vast industrial enterprise with the unexpected but no less compelling image of them making axes to keep the sky from falling.

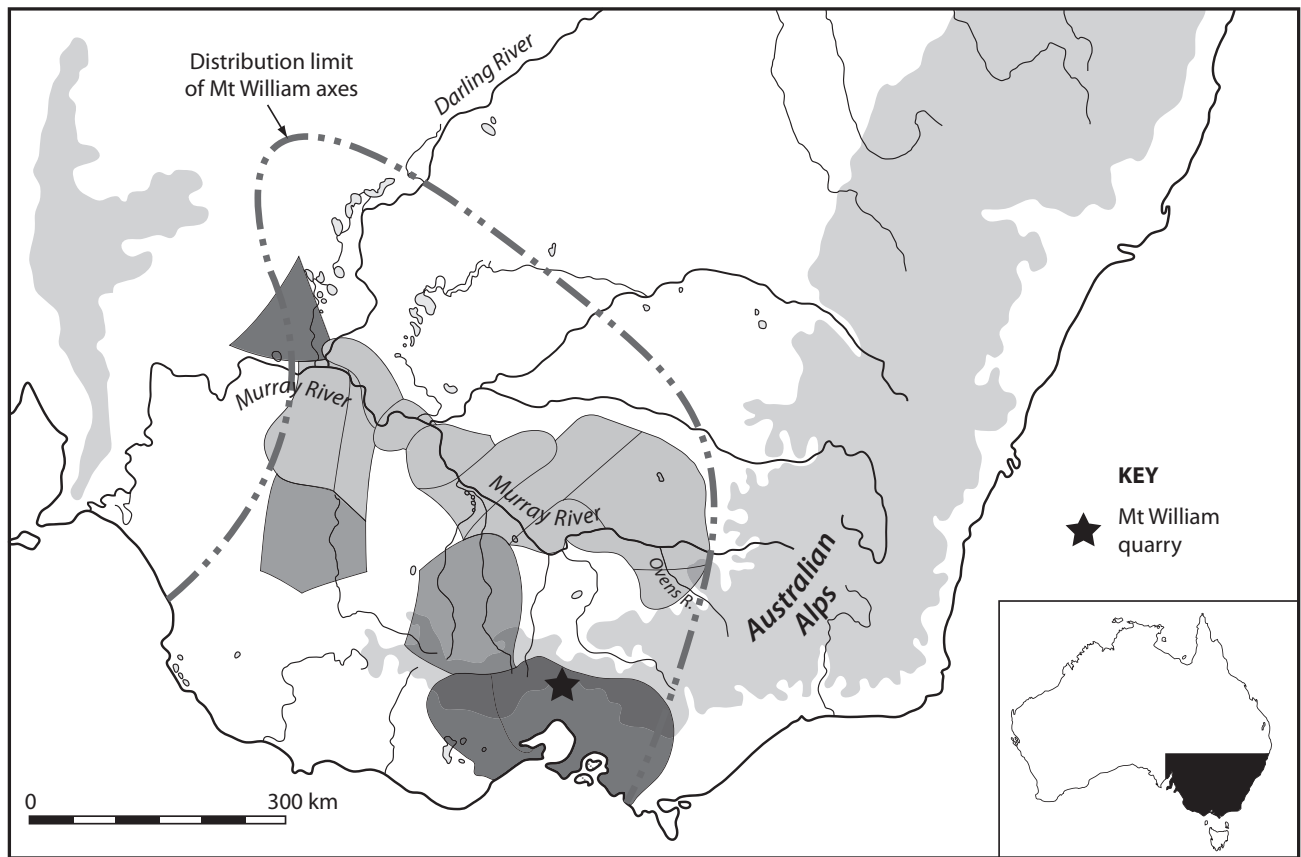


Figure 6. Known distribution of the 'falling sky' message. Dark grey shaded areas denote the estates of language groups which received the message that the sky would fall unless axes were sent into the Australian Alps. Light grey shaded areas represent the estates of the various language groups along the Murray River through which Howitt (1904) mentions the message passed. Medium grey shaded areas show the estates of southern Victorian language groups for which the belief that the sky was supported by poles or props is recorded.

So were the occupants of the Australian Alps the initiators of the 'falling sky' story, perhaps as a means of addressing inequalities in the exchange system and gaining access to Kulin greenstone axes? This seems unlikely; very few Mt William axes or greenstone specimens from other Cambrian Belt quarries were found in the Australian Alps (McBryde 1978). Stone axes, axe quarries and axe-grinding sites are relatively common archaeological occurrences in the alpine region and stone axes occur as grave goods in burials suggesting that they were symbolically important (Flood 1980; Helms 1896, 403); however, most alpine axes seem to have been made from locally available rock (Flood 1980). The bogong moth-hunters of the Australian Alps had little to do with the Kulin and other groups of the inland plains to the west; linguistically they were quite distinct and although they appear to have been somewhat insular the fragmentary ethnohistorical evidence suggests closer links with groups from the

south coast of New South Wales (Flood 1980, 278). If any Mt William axes were sent towards the Australian Alps they may have been intercepted by groups living nearby to them, such as Kallakallap's people, and redirected back into the Murray basin exchange routes. Perhaps Kallakallap's people or some other marginal Kulin clan(s) seen as intermediaries between the human world and the force in charge of maintaining the props were the 'knowing old thieves' perceived by Buckley. On the other hand, such recipients may also have truly believed that their actions kept the sky from falling, resulting social and economic benefits of their access to axes notwithstanding.

The point is that it may have been the quarry owner/managers themselves, despite their strict control over both the quarry operation and the reproduction of religious knowledge for the site, whose actions were informed by external agencies. Mt William quarry was a geographically isolated site

but it is unlikely to have been a culturally isolated one. The creationary journeys of Ancestral Beings like Bunjil and Lohan created webs of interconnectedness between people and places across vast distances of southeastern Australia, linking even traditional enemies (i.e. Kulin and Kurnai) in shared understandings of the symbolically charged landscape. Kulin ideas about human origins also involved complex understandings of the role of stone axe technology in the continued maintenance of human existence, and certain people and places in the far-distant landscape (the Australian Alps) were apparently linked to these ideas. Accordingly, it may have been difficult to maintain uncontested ideological control over Mt William if the cultural significance of the quarry itself — and the subsequent welfare of the quarry owner/managers — were intrinsically linked to sites outside the boundaries of Woiworung country, for which distant individuals and clans were responsible.

Conclusion

Isabel McBryde's research shows that greenstone axes from Mt William quarry were preferred over axes from technologically equivalent greenstone and other hard rock sources, suggesting that Mt William axes had particular symbolic significance for many Aboriginal people in southeastern Australia. Surviving oral traditions suggest that Mt William quarry may have had an important role in Kulin mythology that was seen as imbuing its axes with great power. The quarry owner/managers as song-makers were responsible for receiving such knowledge from the Ancestral world and communicating it to their own and far-distant groups. Their role in creating and/or reinforcing the great power of Mt William in the form of myth, therefore, seems likely. However, the widespread notion in southeastern Australian cosmologies that stone axes kept the sky from falling suggests that the production of axes and their movement across the landscape in specific, non-random directions were underwritten by complex symbolic considerations and beliefs, such as the need to propitiate certain dangerous supernatural forces and to maintain cosmic order. Ethnohistorical evidence implies that senior clan-heads maintained strict control over Mt William and were the knowing, central figures in the vast axe production and distribution system. In some respects this may have been the case; however, the 'falling sky' incident gives the impression that greenstone axes were being drawn from the southern quarry far to the north and further beyond by agencies over which the quarry owner/managers had little control or influence.

As a final point, it is worth noting that the 'falling sky' incident has been interpreted by some scholars as evidence for the rapid breakdown of Aboriginal cosmic order in the face of the European invasion:

The inference was clear: the eastern support had given way and the sky had fallen down. Now as a result, the ghosts or reincarnations of all the black-fellows who ever lived [Europeans] had broken through from the spirit world to swarm over the land (Willey 1979, 55; see also Maddock 1972, 108; cf. Sharp 1952).

An alternative interpretation, however, seen in light of the evidence for greenstone axe distribution in southeastern Australia, is that cosmological catastrophes of this nature may have long preceded European contact, due to the embeddedness of technological concerns in the belief systems of Aboriginal people.

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